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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)

CINGULAR WIRELESS LLC)

Petition for Waiver of Section 22.367 of the)
Rules Concerning Wave Polarization in the)
Cellular Radiotelephone Service)

To: Wireless Telecommunications Bureau, Commercial Wireless Division, Policy and Rules
Branch

REPLY COMMENTS OF AT&T WIRELESS SERVICES, INC.

Pursuant to the Commission's Public Notice, AT&T Wireless Services, Inc. ("AWS")
hereby files its reply comments in the above-captioned proceeding.^{1/}

INTRODUCTION

AWS supports Cingular Wireless LCC's ("Cingular's") request for waiver of Section 22.367 of the Commission's rules, which requires all cellular licensees providing standard analog service to use vertical wave polarization.^{2/} AWS believes that Section 22.367 should be eliminated, as the Commission recently proposed in its biennial review process, because it undermines spectrum efficiency and innovation.^{3/} Until the Commission can complete that

^{1/} Public Notice, Wireless Telecommunications Bureau Seeks Comment on Cingular Wireless LLC's Request for Waiver of the Cellular Vertical Wave Polarization Requirement, DA 02-240 (rel. Feb. 1, 2002).

^{2/} See 47 C.F.R. § 22.367(a)(4).

^{3/} Year 2000 Biennial Regulatory Review – Amendment of Part 22 of the Commission's Rules Affecting the Cellular Radiotelephone Service and Other Commercial Mobile Radio

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rulemaking proceeding, however, Cingular's request and the comments filed thereon fully support an immediate waiver of the rule's restrictions for all similarly-situated parties.

I. THE VERTICAL WAVE POLARIZATION REQUIREMENT SHOULD BE ELIMINATED

The record in this proceeding and in the Commission's *Biennial Review NPRM* proceeding is clear – the vertical wave polarization rule is no longer needed for the purposes for which it was created and its elimination would serve the public interest.^{4/} In particular, eliminating the rule would make use of polarization diversity antenna arrays in the cellular service more economical and would result in smaller antenna arrays.^{5/} Having the flexibility to use polarization diversity would permit system operators to employ innovative design techniques and technologies that facilitate increasingly efficient use of the spectrum.^{6/} In addition, the reduction in the total number of antennas at a given site would result in lower costs, more

Services, WT Docket No. 01-108, *Notice of Proposed Rulemaking*, FCC 01-153, ¶¶ 43-47 (rel. May 17, 2001) (“*Biennial Review NPRM*”). The Commission has “tentatively conclude[d] that [it] should relax this portion of the rule with regard to all cellular stations” and has “propose[d] to amend Section 22.367 of [its] rules to provide that cellular stations are not limited to wave polarization.” *Id.* ¶ 47. The Commission has taken comments in this proceeding and has the matter under review.

^{4/} *Biennial Review NPRM* ¶¶ 45-46; Cingular Petition at 7-8; Andrew Corporation Comments at 2; Decibel Products Comments at 1. In the *Biennial Review* proceeding (WT Docket No. 01-108), twelve parties filed comments related to the vertical wave polarization requirement. Of those, ten parties supported its elimination (AT&T, CenturyTel, Cingular, the Cellular Telecommunications and Internet Association, Deltec, Ericsson, Qualcomm, the Telecommunications Industry Association, Verizon Wireless, and Western Wireless). The only commenters expressing reservations about the rule's elimination were U.S. Cellular and OnStar. In the comments filed on Cingular's Petition, Allgon, the Andrew Corporation, and Decibel Products support the waiver and the rule's elimination. OnStar proposes that the waiver be granted in part and denied in part.

^{5/} *Biennial Review NPRM* ¶¶ 45-47; Cingular Petition at 3-6; Andrew Corporation Comments at 2-3.

^{6/} Cingular Petition at 3.

efficient use of antenna sites, more aesthetically pleasing antenna sites, reduced tower loading, and minimization of zoning issues.^{7/}

The vertical wave polarization requirement was adopted in 1994 “to accommodate mobile units that employ a vertically polarized whip antenna and thus promote interoperability” and “to protect broadcasters in the upper UHF channels from interference.”^{8/} It no longer is necessary to accomplish either of those objectives. Indeed, as the Commission noted in the *Biennial Review NPRM*, “the scattering environment in which today’s small portable cellular telephones operate tends to depolarize signals to such an extent that maintaining the same wave polarization for all cellular base stations typically provides no interoperability benefit.”^{9/} Moreover, as Cingular explains, cellular systems are unlikely to cause interference to UHF stations because the UHF channels are located far from the frequency bands used for cellular base stations, and mobile units, which are located much closer to television, “have been operating with essentially random polarization for years without any evidence of interference to television.”^{10/} Nor is there any indication that UHF interference has occurred as a result of the deployment of non-vertical polarization by cellular licensees using alternative digital technologies.^{11/}

^{7/} *Biennial Review NPRM* ¶ 46; Cingular Petition at 4. Elimination of the rule would allow carriers to eliminate use of a third antenna and a third transmission line used only to produce vertically polarized waves. *Biennial Review NPRM* ¶ 45 n.67. Eliminating the third antenna helps create the numerous efficiencies of dual-polarization. Cingular Comments at 4-5.

^{8/} *Amendment of Part 22 of the Commission’s Rules to Delete Section 22.119 and Permit the Concurrent Use of Transmitters in Common Carrier and Non-Common Carrier Service*, CC Docket No. 93-116, *Report and Order*, 9 FCC Rcd, 6513, 6558 (1994).

^{9/} *Biennial Review NPRM* ¶ 45; Allgon Comments at 1; Andrew Corporation Comments at 2.

^{10/} Cingular Petition at 8.

^{11/} *Id.* The vertical wave polarization rule does not apply to “alternative technology” such as digital cellular services. 47 C.F.R. § 22.901(d)(2).

OnStar contends that alteration of the vertical polarization standard could undermine the foundation of the analog system, and it therefore asks the Commission not to eliminate the rule in rural areas.^{12/} This concern is misplaced. As Cingular notes, if using non-vertically polarized antennas would cause signal degradation to OnStar's operations in rural areas, it also would result in degradation of cellular signals in those locations. Because it is not in a cellular carrier's interest to permit degradation anywhere in its system, a cellular carrier obviously would voluntarily retain vertically polarized antenna arrays in rural areas.^{13/} Rather than mandate this restriction for rural areas, however, as OnStar requests, the Commission should leave decisions about antenna deployment to individual carriers – the entities best able to balance engineering, zoning, and service quality issues on both a case-by-case and system-wide basis.

Moreover, there is no evidence to suggest that interoperability cannot be achieved absent the regulatory requirement. In fact, as Cingular points out, a number of studies confirm that interoperability will be as acceptable for analog as it has been for alternative technologies transmitting on slant 45-degree antennas.¹⁴

In any event, OnStar's concerns appear to be more with its belief that the cellular analog requirement must be maintained indefinitely than with the vertical antenna polarization standard. As AWS and other carriers stated in response to the *Biennial Review NPRM*, rules requiring analog service are costly and inefficient, serving only to slow the deployment of more advanced digital services and technologies. CMRS providers today actively employ several different transmission protocols and standards (*e.g.*, GSM/GPRS, CDPD, and IS-136) and they should

^{12/} OnStar Comments at 2.

^{13/} Cingular Petition at 6 n.15.

^{14/} Cingular Petition at 7 (“Modern polarization-diversity arrays are comparable in every respect to vertically-polarized, spatial-diversity arrays with respect to communications with mobiles employing vertically-polarized antennas.”); Decibel Products at 1.

have the flexibility to ensure the best possible service to their customers. Like the vertical polarization standard, the analog rule is outdated and no longer serves the public interest. Both should be eliminated expeditiously.

II. CINGULAR'S WAIVER REQUEST SHOULD BE APPLIED TO ALL CELLULAR CARRIERS AND GRANTED PROMPTLY

AWS recognizes that the Commission may not be able to complete the *Biennial Review NPRM* proceeding as quickly as the relief Cingular requests is needed. Accordingly, AWS urges the Commission promptly to grant the requested waiver for Cingular and all similarly situated carriers. Cingular states that it needs the waiver approved by mid-February 2002 in order to purchase equipment for the buildout of its EDGE system that will use an overlay of GPRS packet data and GSM voice technologies.^{15/} Like Cingular, AWS currently is overlaying its TDMA network with GSM/GPRS and requires the flexibility to change its antenna arrays on short notice. As discussed above, the purposes of the vertical wave polarization requirement are no longer being served by retention of the rule and its elimination would serve the public interest. Cingular has satisfied the Commission's criteria for waiver and, therefore, its request should be granted as soon as practicable.^{16/}

^{15/} Cingular Supplement to Petition for Waiver at 3.

^{16/} 47 C.F.R. § 1.925(b)(3).

CONCLUSION

For the reasons set forth above, AWS respectfully requests that the Commission eliminate the vertical wave polarization of Section 22.367(a)(4) and, in the meantime, grant Cingular's waiver request and apply it to all similarly situated parties.

Respectfully Submitted,

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February 19, 2002

CERTIFICATE OF SERVICE

I, Christopher Bjornson, do hereby certify that copies of the foregoing Comments of AT&T Wireless Services, Inc., were served on the following either electronically or by hand delivery* this 19th day of February, 2002.

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